RAPID CHANGES OF INTERNATIONAL TRADE FLOWS GEOGRAPHY. AN APPROACH GROUNDED ON THE KNOWLEDGE-BASED ECONOMY CONCEPT

Silviu Neguț*
Academy of Economic Studies, Bucharest, Romania

Abstract
After the Second World War international merchandise trade has known an impressive rising trend: from 121 bn. USD in 1948 to 25.172 bn. USD in 2009, which means a rise by 210 times, being therefore the economic sector with the most spectacular development. International trade – considered to be the right indicator of a country's economy – has become one of the major factors of economic development mainly due to the knowledge-based economy. Except for the economic development (translated into high levels of production and productivity, expressed by high figures of GDP), the effect of knowledge has been registered by exports, by their dynamics and high level of foreign markets penetration. It is therefore relevant that three small countries and provinces (the Netherlands, Hong Kong – province of Peoples Republic of China and Singapore) in terms of territory and population are among the first fifteen global exporters (with a percentage of exports ranging from 2,2% and 4%), in contrast with larger countries in terms of surface and population, which play an insignificant role in international trade. These small countries/provinces represent relevant models of using information technology and modern communication, fundamental elements of a knowledge-based economy. Thus, they are very competitive on the global market (the key factor of success). In this paper we argue that humankind is in a transitory phase from industrial economy to knowledge-based economy (in this sense the oil trade is a very good example, as the most traded merchandise).

Keywords: international trade, international trade flows, competitiveness, knowledge-based economy.

JEL Classification: A12, A23, F10, F16

Introduction

Geographers have always dealt with trade, since the ancient travelers – who, among others made considerations on the merchandises that were relevant to the places they had reached, as well as the merchandises from their origin country that could be traded there – to modern times, when geography of international trade represents one of the main sub-fields of

* Author's contact: e-mail: silviu.negut@gmail.com

human geography (Neguț, 2011). Two hundred years ago the German Philosopher Immanuel Kant (1724-1804) nominated the geography of commerce as one of the six branches of geography. Nowadays trade, especially international trade, represents an important issue of any paper of course in economic geography which deals with global economic reality.

The activity of selling and buying merchandises is very old, but international trade's origin is linked with the moment when states were being grounded. International trade exchanges have a historical character, being more extensive and diverse from one historical period to another.

International trade experienced an impressive growth during the *Great Geographical Discoveries.* Since the New World joined the economic circuit, the main trade flows have concentrated on the same paths, following the same direction and products: mainly raw materials (including labour force – during certain periods slaves, as well) from the new lands and manufactured products from metropolis. The exchange relationships were obviously unequal, but the flows were stable and with a long-term perspective.

The second moment of relevance in international trade was the *industrial revolution*, a complex transitory process from manual production to mechanical, intensive production. This also implied a spectacular development of transportation (including the development of new means of transportation such as railways and air transportation) and an impressive increase of merchandise productions.

Another (trade-) relevant factor has come into the equation: the *demographic boom*. World population reached the first billion in more than half a million years (in 1820), less than two hundred years to come close to the seventh billion (6.87 bn. in 2010). This demographic growth has improved the international trade flows in order to reach the ever growing needs of the world population. Moreover, in the globalization era, alongside the visible trade, there is an impressive growth of invisible trade, as well.

In every historical period there were preferred merchandises that had been traded, usually the exceeding ones or, on the contrary, those in deficit in certain places/regions. Thus, in Antiquity, there were traded – gold, silver, salt, grains and slaves; in the Middle Ages, starting with the *Great Geographical Discoveries,* there were traded precious metals, spices (vanilla, clove, cinnamon, pepper etc.) – which were the original reason for discovering the New World - products from plantations (cotton, tobacco, sugar cane, tea etc.) and black slaves (mainly from Africa to America); once the industrial revolution took place, the fuels, minerals and machines (in a general sense of the word), as well as manufactured products became more and more traded; nowadays almost everything is being traded, including the invisible trade flows.

The international trade has been the reason for creating the common markets (European Union – for a time being known as the Common Market, NAFTA, MERCOSUR, ASEAN, APEC etc.), the free trade zones and World Trade Organization (created in 1995 as a successor of GATT / General Agreement on Tariffs and Trade, which was formed in 1947).

1. International trade and knowledge-based economy

Four decades ago, Richard M. Cyert, the president of Carnegie-Mellon University in Pennsylvania, US, had the initiative of buying computers not only for all colleges, offices and class-rooms, but later for each student, although it seemed at that time unreal. Today this is a universal reality. It was the first step toward what will be called the revolution in knowledge: "people will have to constantly enrich their knowledge in order to control machines and enlarge their personal horizon" (Servan-Schreiber, 1990, p. 182). The next step will be sententious: *from now on*, *the only real source of power will be knowledge*. The traditional competition should be replaced by competitiveness, or should be at least complemented by it.

In this new type of economy the key term is the *information*. The major advantage of information is that "it is not finite. It seems to regenerate itself. Information creates information. More and more knowledge results out of knowledge. Knowledge is a public good. Once it is discovered, it is actually free for all of us (except for the one protected by the law). Sooner or later, everybody will benefit from the advantages provided by the new discoveries. Once made public, adding new users to knowledge has a null marginal cost. The persons' process of education in order to use the new knowledge costs not only time, but also resources, together with its application in the economic activity, as knowledge is best assimilated through practice and not through memorization (Romania Development Gateway, 2010).

OCDE considers that in a knowledge-based economy, "the science system contributes to the key-functions of: *i) knowledge production* (developing and providing new knowledge), *ii) knowledge transmission* (educating and developing human resources) and *iii) knowledge transfer* (disseminating knowledge and providing inputs to problem solving)" (OCDE, 1996, p. 21). At the same time, according to OECD, there are six indicators that measure the knowledge-based economy:

- Measuring knowledge;
- Measuring knowledge inputs;
- Measuring knowledge stocks and flows;
- Measuring knowledge outputs;
- Measuring knowledge networks;
- Measuring knowledge and learning (OCDE, 1996, pp. 29-45).

The same organization considers that it is very difficult to calculate these indicators. One would rather say that it is easier to see the results materialized in the numbers of PCs, internet access, the level of modern technology, the level of competitiveness on the global market. A negative factor is sometimes omitted, respectively the *brain-drain*. Some developed countries have the capacity to attract the best qualified human resources from developing countries, thus, enhancing their knowledge capital to the expense of the suppliers from a particular field (Neguț and Rusu, 2002).

The knowledge-based economy – or according to other analysts, the information-based economy (Nicolescu and Nicolescu, 2005) - has become a very studied issue within different scientific events or projects, such as the one initiated by the Romanian

Government (Ministry of Communication and Information Society) with the support of the World Bank, which has three major components:

- greater access to ITC technologies and the improvement of digital literacy;
- developing and promoting e-government services;
- promoting e-commerce and providing financial and technical assistance in order to adopt innovative solutions within small and medium enterprises (E-comunitate, 2009).

According to some experts in this field, "there are several important aspects of information economy, more widely known as the *New Economy* (our underlining) that are fundamentally different or differently emphasized in comparison to the old economy [1](…). In the *New Economy* innovation through knowledge is the most important; this stands at the basis of several aspects of economy. In the promoted global knowledge-based economy, the advantage of nations will come not from the cheap work force, but from their capacity to use their intellectual capital. Today, and in the future, it is "brain" and not "brawn" that is the key to economic growth (Neef, Siesfeld and Cefola, 1998).

In spite of the fact that in the future wealth will depend on the *control of knowledge* (OCDE 1996), we are now in a transition phase, in which knowledge has a double meaning: the one implied by the *knowledge-based economy* and the one that focuses on the *classical knowledge*, meaning a better connection to planetary realities, based on a good control of information. The best example in the field is the one regarding international oil trade– the most traded merchandise on the global market for some time. The competition for this merchandise has global dimensions, involving very many actors (states, regional blocks, transnational companies etc.).

2. International trade and knowledge-based economy

A key term in international trade flows is the *trade flow* as a part of the international economic flow, which reflects the quantity of material, energy and information moved between the producer and the consumer through different means. Actually, the Earth is covered with a multitude of trade flows, among which several merchandises are, nevertheless, of greater relevance: raw materials, especially minerals (oil, coal, natural gas, ferrous and non-ferrous ores – especially bauxite, copper, lead, zinc -, precious minerals) and agricultural products (grains – rice, wheat, corn -, cotton, tobacco, tea and other plantation products, fruits, meat and meat products, milk products etc.). There are also added the industrial goods (including those of mass consumption), which vary in size and use (from electronic products and watches, to oil –ore carriers, planes, tanks).

International trade flows represent, along with international financial or monetary flows, one of the two components of international economic flows. They may take the form of *corporal goods* flows (raw or processed goods)-known in the common language under the name of flow of goods, a domain on which we focus in this study- the flows of *intangible goods* (patents, technology, projects etc.) and *service flows* (transport, international tourism, insurance, external consultancy etc.).

[1] Refers to the industry-based economy.

Foreign trade which is usually defined as "the totality of export, import, reexport operations of goods and services, deployed by a country in the process of participation in the international labour division" (Marin and Puiu, 1993, pp. 138-139), has currently become one of the determinative factors of economic growth. International economic exchanges have known such a big expansion that a *world market* has emerged, in the context of the settlement of a *global economy*, respectively "the totality of national economies, which are mutually connected through a network of external relations determined by the participation of states in the international division of labour and in the world economic circuit, relations which are governed by an international economic order specific to the given historical stage" (Dobrotă and Ciucur, 1995, p. 506). Yet, more than a century ago (1880), the historian, economist and Romanian philosopher, Alexandru D. Xenopol (1847-1920) came across the role of economic barometer of external exchanges: "The foreign trade of a country will convey the surest mirror of its economic state. Through its export, one will provide the people power production; through the imported objects one will see to which extent this nation is economically dependent on other peoples" (Xenopol, 1967, p. 150).

It is generally accepted the fact that the catalyst factor of international commercial exchanges is the international labour division whose essential elements are, the specialization in the production of goods and services and respectively, the international economic cooperation based on specialization. Nevertheless, according to certain economists, international exchanges emphasize the economic discrepancies, disadvantaging the less developed partners. Or, as a Romanian economist said in 1937: "since the labour productivity in the industrialized countries is bigger than in the agricultural countries it is impossible as far as the mutual exchange is concerned, to be equally favourable for the both sides" (Manoilescu, 1986, p. 140). However, certain modifications have interfered, connected precisely to knowledge-based economy: not all the industrial countries are equivalently competitive, some of them innovating more and creating more competitive products or new products with superior qualities. Thus, we arrive to the *neo-technological approach* of Paul Krugman who introduces as determinatives of economic exchanges the technological evolutions and the emergence of new goods, asserting that the North (the developed countries) innovate all the time, creating new products, in order to maintain their incomes (Krugman, 1979).

Besides, the determinant factor of success in the international commerce is the *competitiveness*[2], especially in the actual context of fight for the conquest of markets and the achievement of profits. The theoretical and practical fundamentals of external competitiveness of a country must be analyzed in terms of stimulating/restrictive factors of them, the labour productivity, the relative abundance of productive inputs, the technology and the economic growth, the imperfect competition, the international movement of productive inputs, the custom duties, the economic integration processes, the external balance of payments or the foreign exchange rates (Rujan and Pârgaru, 2004).

Apart from the economic development- reflected in both high production and productivity (in their turn reflected in the volume of GDP)-, the effect of knowledge has manifested particularly in the foreign trade, in its dynamics and especially in the high degree of penetration of the products of certain countries or certain companies on the global market.

[2] „the ensemble of conditions which a merchandise must fulfil in order to assure its penetration, maintenance and improvement of its position on a certain market, in a climate of competition from other similar products" (Puiu and Marin, 1993, p.153).

In this sense, table no. 3 and figure no. 2 are eloquent, with the main world exporters and importers.

3. The Dynamics of World Trade of Goods after the Second World War

This dynamics is impressive: from only $121 milliards in 1948 ($ 1 173 milliards in 1973 and $ 7 462 milliards in 1993) to $ 25 172 milliards in 2009 which means a growth by almost 210 times (!). No other sector has known such a spectacular evolution.

In the two big domains the growth is similar:

- exports: from only $59 milliards in 1948 ($ 578 milliards in 1973 and $ 3 676 milliards in 1993) to $12 490 milliards in 2009, a growth by 212 times;
- imports: from $62 milliards in1948 ($594 milliards in 1973 and $ 3 786 milliards in 1993) to $ 12 421 milliards in 2009, a growth by 200 times.

Tables no. 1 and no. 2 and figure no. 1 show the evolution of exports and imports during the period 1948-2009, the distribution and the dynamics (%) of them on big regions and in the main exporting and importing countries, as well as the hierarchy of the main world exporters and importers in terms of total volume (in $ milliards) and as a weight in the world total of the domain (exports, respectively imports). Even the brief analysis of these two tables shows us the big modifications on the world and regional plan, as a direct expression of the dynamics and of exchanges in the world economy. It is enough to compare the regions of North America (with its main actor USA) and Asia (with its main actor China): the weight of the former has diminished from 28,1% (1948) to 13,2% (2009), and the one of the United States (which have for a long time dominated this domain), from 21,7% to only 8,7%, while the weight of Asia (even without the Middle East and the countries of Central Asia, the ex-components of the Soviet Union) has grown from 14,0% to 29,7% and the one of China from only 0,9% to 9,9% in the same period, becoming the world leader. Meanwhile, one has to notice the strong polarization of the international trade, both as far as exports and imports are concerned: in both cases, out of a total of more than 200 countries and listed territories, the first ten detain more than a half (53% at exports, 53,7% at imports)[3], and the first 50[4], more than 90% (92,7% at exports and 91% at imports).

Table no. 1: World export of goods (total, on regions and certain countries)

Years	1948	1973	1993	2003	2009
World total ($ milliards)	59	579	3 676	7 376	12 178
World total (%)	100	100	100	100	100
out of which:					
North America	28,1	17,3	18,0	15,8	13,2
USA	21,7	12,3	12,6	9,8	8,7
Central and South America	11,3	4,3	3,0	3,0	3,8
Brazil	2,0	1,1	1,0	1,0	1,3
Europe	35,1	50,9	45,4	45,9	41,2
Germany	1,4	11,7	10,3	10,2	9,2

[3] If one adds to the first ten exporters and respectively, importers the following five (see Table no.3), the weight will arrive to almost two thirds out of the total (64,5% at exports and 65% at imports) which underlines even more the process of polarization in the domain.
[4] Romania occupies the 50th position at exports and the 42nd at imports.

Years	1948	1973	1993	2003	2009
France	3,4	6,3	6,0	5,3	4,0
CIS	-	-	1,5	2,6	3,7
Africa	7,3	4,8	2,5	2,4	3,2
Middle East	1,9	4,1	3,5	4,1	5,7
Asia	14,0	14,9	26,1	26,2	29,4
China	0,9	1,0	2,5	5,9	9,9
Japan	0,4	6,4	9,9	6,4	4,8
India	2,2	0,5	0,6	0,8	1,3
……	….	….	….	….	….
European Union	-	37,0	37,4	42,4	37,7
GATT/WTO	63,4	84,1	89,3	94,3	94,5

Source: World Trade Organisation, 2010

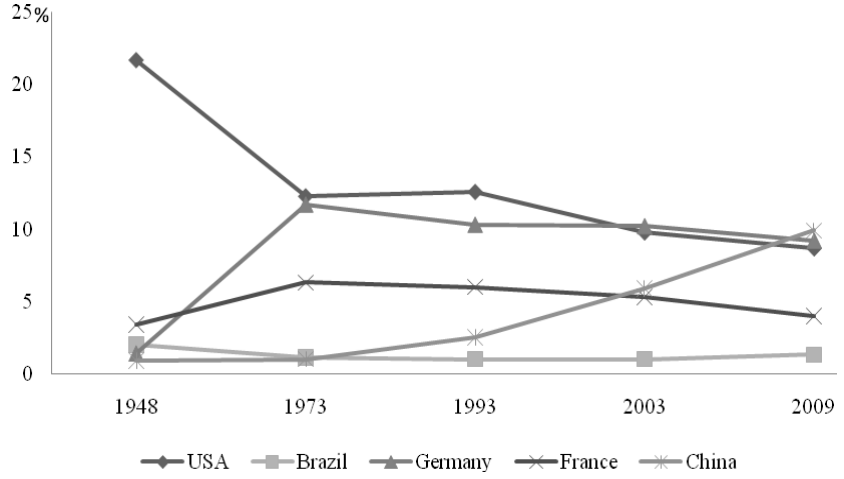

Figure no. 1: Dynamics of share in total world merchandise export of some economic power in the period 1948-2009

Source: World Trade Organisation, 2010

Table no. 2: World import of goods (total, on regions and certain countries)

Years	1948	1973	1993	2003	2009
World total ($ milliards)	62	594	3 786	7 689	12 421
World total (%)	100,0	100,0	100,0	100,0	100,0
out of which:					
North America	18,5	17,2	21,4	22,4	17,5
USA	13,0	12,3	15,9	16,9	12,9
Central and South America	10,4	4,4	3,3	2,5	3,6
Brazil	1,8	1,2	0,7	0,7	1,1
Europe	45,3	53,3	44,6	45,0	41,6
Germany	2,2	9,2	9,0	7,9	7,6
France	5,5	6,4	5,7	5,2	4,5

Years	1948	1973	1993	2003	2009
CIS	-	-	1,2	1,7	2,7
Africa	8,0	3,9	2,6	2,1	3,3
Middle East	1,7	2,6	3,3	2,7	4,0
Asia	13,9	14,9	23,7	23,5	27,4
China	0,6	0,9	2,7	5,4	8,1
Japan	1,1	6,5	6,4	5,0	4,4
India	2,3	0,5	0,6	0,9	2,0
……..	….	….	….	….	….
European Union	-	37,1	35,3	40,2	37,4
GATT/WTO	58,6	85,5	89,7	95,6	95,7

Source: World Trade Organisation, 2010

Table no. 3: The Main World Exporters and Importers, 2009 (in $ milliards and respectively, %)

Exports				Imports			
		$md.	%			$md.	%
1.	China	1 202	9,6	1.	USA	1 605	12,7
2.	Germany	1 126	9,0	2.	China	1 006	7,9
3.	USA	1 056	8,5	3.	Germany	938	7,4
4.	Japan	581	4,6	4.	France	560	4,4
5.	Netherlands	498	4,0	5.	Japan	552	4,4
6.	France	485	3,9	6.	Great Britain	482	3,8
7.	Italy	406	3,2	7.	Netherlands	445	3,5
8.	Belgium	370	3,0	8.	Italy	413	3,3
9.	South Korea	364	2,9	9.	Hong Kong - China	352	2,8
10.	Great Britain	352	2,8	10.	Belgium	352	2,8
11.	Hong Kong - China	329	2,6	11.	Canada	330	2,6
12.	Canada	317	2,5	12.	South Korea	323	2,5
13.	Russian Federation	303	2,4	13.	Spain	288	2,3
14.	Federation Singapore	270	2,2	14.	India	250	2,0
15.	Mexico	230	1,8	15.	Singapore	246	1,9
	World total	**12 490**	100,0		**World total**	**12 682**	100,0

Source: World Trade Organisation, 2010

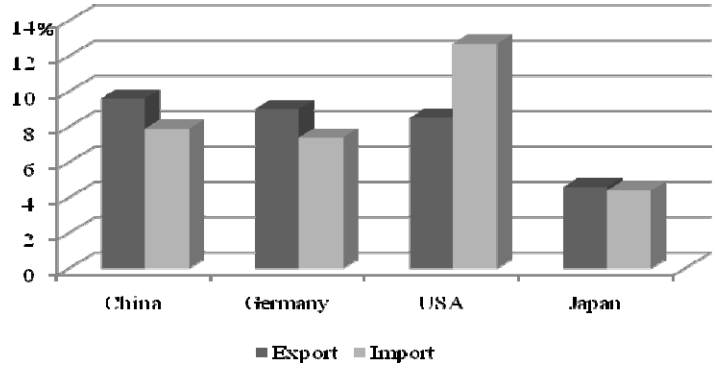

Figure no. 2: The Main World Exporters and Importers (share of world total, 2009)

Source: World Trade Organisation, 2010

4. World Discrepancies Regarding the Foreign Trade

The analysis of the world countries in terms of the weight in the world surface and population, on one hand and in the one of exports, on the other hand, shows us incredible discrepancies: small countries, with reference to the first indexes (the surface, the population) which detain significant weights in the world trade and inversely, large countries and with a numerous population which detain insignificant weights in the world trade.

Nowadays, among the first fifteen biggest "traders" of the world, both as exports and imports, three countries/small territories can be counted, in terms of both surface and population: Singapore, Hong Kong[5]and Netherlands. These three countries/territories, famous for their lack in natural resources[6], have been for a long time placed among the most important actors of the knowledge-based economy (all three have been for decades among the leaders of the top industries: electronics, electro-technology, robotics etc.) which explains the spectacular economic development, reflected in an almost incredible weight in the world trade. As a comparison, Romania which represents 0,16% of the planetary land stretching and 0,31% of the world population, in spite of the fact that it has a weight of the external trade (0,33 at the exports and 0,43 at the imports) slightly superior to these indexes, they are far inferior to the already mentioned small countries:7-13 times smaller as far as the exports are concerned and 5-8 times as far as imports go.

Another example: India which is one of the most stretched (2,16% of the planetary land stretch) and especially one of the most populated (16,4% of Terra's population) countries of the planet, has an external trade two-three times smaller (both at exports and imports) than

[5] Hong-Kong (Xiang Gang), ancient British colony (1843-1997), was recovered by the P.R of China in December 1997, being considered, (recognized) as a province of this country, though in the international statistics it still appears separately.

[6] With a small exception, Netherlands has become in the '50s of the past century an important producer of natural gas (however, lately it has recorded a constant decreasing production).

the one of the mentioned countries-territories [7]. One can also give other examples (table no.4 and figure no. 3).

Table no. 4: Small countries/territories and some big countries, plus Romania (as surface, population, exports-2009)

Country/territory	Surface (% out of the world total)	Population (% out of the world total)	Exports	
			% out of the world total	Place on the Globe
Netherlands	0,28	0,25	4,0	5
Hong Kong, China	0,0007	0,081	2,6	11
Singapore	0,00047	0,067	2,2	14
……	……..	…….	…….	……..
Russia	11,6	2,1	2,4	13
India	2,16	16,6	1,3	21
Brazil	5,8	2,8	1,2	24
Indonesia	1,3	3,46	1,0	30
Nigeria	0,63	2,1	0,4	44
……..	…….	…….	……..	……..
Romania	0,16	0,31	0,3	50

Source: World Trade Organisation, 2010

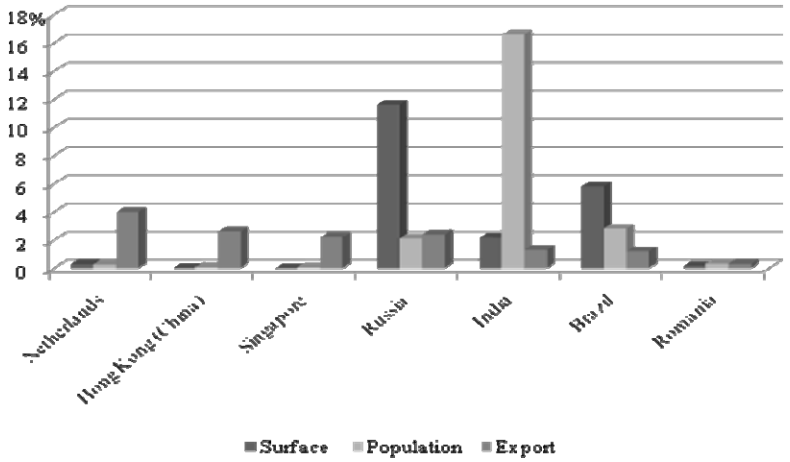

Figure no. 3: Small countries-big exporters, big countries-small exporters, plus Romania (%, share of world total)

Source: World Trade Organisation, 2010

[7] Unlike other countries, India which has a very contrasting economy (with underdeveloped sectors, but with others in the forefront of world science and technology), is placed in certain domains (especially in the one of the IT) among the most advanced countries.

The explanation of the significant weight in the world exports and of the places on the top position in the world's countries hierarchy of the three small countries/territories (Netherlands, Hong-Kong, China and Singapore) is given, to a good extent, by the fact that they have been for a long time true models of using informational technology and communications, a basic element of the knowledge-based economy. It is in this way that one could explain the fact that a mini-state like Singapore which is twenty-five thousand (!) times less stretched and thirty-one times less populated than Russia, detains a similar position with the last one, as far as exports go: Singapore the 14th place (with 2,2 % out of the world exports), Russia, the 13th place (with 2,4 % out of the world total).

Two of the three countries/territories belong to the category of such-called "Asian Tigers" (Hong-Kong along with Japan, South Korea, Macao) and "Asian Lions" (Singapore along with Malaysia, Thailand etc.), countries which generally lack in natural resources and which have known a spectacular development after the Second World War, insisting on the top industries, realizing extremely competitive products on the world market. The first conclusive example was represented by Japan, which during the '70-'80s of the past century made everybody talk about "the Japanese miracle", reflected not only in spectacular growths of the production, mainly industrial ones, but also in the conquest of the world's markets, rapidly becoming the third overall exporter of the world and the second as far as the technology export is concerned. Another factor of Japan's success was represented by the "*niche" politics,* respectively the careful study of the world market in order to discover the free segments or easily penetrable segments of it.

The best example was represented by the Japanese politics in the domain of civil shipbuilding industry: noticing the fact that the two great world powers, the United States and the Soviet Union were focused on the military shipbuilding industry, a very expensive industry (cruisers-port, port-planes, submarines etc.), Japan has massively invested in the domain's civil industry, rapidly becoming the biggest producer in the field (realizing for a while more than a half of the water launched tonnage!) and respectively, *the biggest world exporter of ships*; what is more, nowadays, the biggest ships which cross world's seas and oceans (ships transporting petroleum and minerals of more than 500 000 tdw) are produced by Japan.

Nowadays, the best example of "economic miracle" is represented by the communist China-called "the Asian Dragon" (thanks to its dynamism similar to the one of the former "Tigers" and "Lions")- which have took over and also excelled the Japanese model, detaining, in addition, the advantage that, unlike the first "Asian Tiger", it also has resources and important raw materials (coals-more than 40% of the world production, iron ores-a third of the world production, tin- a half of the world extraction, petroleum, bauxite, zinc, gold, silver etc.). Moreover, it has added an extraordinary capacity of assimilation and adaptation of successful international brands.

With an exceptional economic growth (9-10% during 2003-2006, over 12% during 2007-2008, over 8% during 2009-2010, in plain world economic crisis), China has become the second world's economic power in 2008, surpassing both Germany and Japan which had for a long time occupied the 2nd, respectively the 3rd position in terms of GDP. Maybe, the most spectacular and relevant success of China is the one that in 2009 became the world's biggest producer both of auto-vehicles, overall, and cars, thus surpassing the two countries USA and Japan which have disputed their primacy during the last 40 years. Furthermore, China became in 2009, *the world's biggest exporter,* surpassing both

Germany which longtime used to detain this position and the United States, along with Japan. It holds one tenth of the world's exports ($1 202 md., 9,6% out of the total) and if one also adds the exports of Hong-Kong ($329 md., 2,6% out of the world' total), China detaches itself with more than three percentages from Germany (placed on the second position) and with almost four percentages from the United States (3rd place). In the Chinese strategy regarding the promotion of exports, one can count, among others, the foundation of the Foreign Trade Institute which has more than 1 500 employed scientific researchers whose responsibility is to study the world market in order to identify "niches" in which the Chinese products may have access, as well as the identification of new possible demands or products.

5. Case Study: Oil Trade

Nowadays, oil is the most traded raw material and as a consequence it generates the most important commercial flows. Out of almost four milliard tones of oil which were extracted (3.82 md. tones in 2009), approximately 70%, belong to trade operations.

Oil is a component part of the strategic resources category, respectively those resources without which the social-economic development is almost impossible to conceive during a certain historical period (Neguț, 2008, p. 225). Even though it has one hundred years and a few of economic existence, the oil seems to define nowadays the sense of our civilization. Firstly, oil, such as natural gases, means energy, that energy which is used in the mechanical locomotion on Terra (the car, the bus, the plane, the ship etc.) and which under another form (electric energy) *assures the world flow of information* at an unimaginable speed in the whole human history. In order to reduce the dependence on the main region which supplies the oil on the Globe, the Middle East (characterized through conflicts), the Occident has launched the project "The Road of Caspian Energy to Europe", searching solutions so as oil and natural gases from this area arrive to the West (European Union and the United States), initiating pipelines (such as Constanța-Trieste and NABUCCO) which could not be controlled by Russia, that may use the "political tap", respectively the stoppage on a short or on a longer term of the respective commercial flows, thus harshly affecting the economies of the Occidental countries, dependent, to a great extent, on the two energetic resources; in fact, one already talks about "the gas war", as a consequence of the stoppage in the supply of natural gases, by Russia to Georgia and Ukraine (Neguț and Neacşu, 2009; Sébille-Lopez, 2006).

Coming back to oil, the main world producers (mil. tones, 2009) are Russia (494,2), Saudi Arabia (460,0; with 55 mil. tones less than in 2008, loosing the first position), USA (325,0; with 20 mil. tones more than in the previous year), Iran (202,0), China (189,0), Canada (156,0), Mexico (148,0), Venezuela (125,0), Iraq (122,0) and Kuwait (121,0).

Overall, big consumers and at the same time, importers are the European Union, Eastern and South-East Asia and respectively, the USA. In each of the two regions there are also producers (for example Great Britain in the European Union, with approximately seventy mil. tones annually and China in Eastern-Asia, with approximately one hundred and ninety mil, tones annually), as well as the USA which have a relevant production (approximately three hundred million tones annually), however the demand for consumption being far bigger: USA usually import almost 600 mil. tones (450 mil. tones in 2009, because of the economic crisis), China as much as it extracts (in 2009 more than that, more than two

hundred mil. tones) and the European Union more than six hundred mil. tones (in 2009, approximately five hundred and fifteen mil. tones). As a consequence, the flows of oil result from the figure no. 4. One can easily notice that the most important of them come from the Middle East (more than eight hundred and twenty mil. tones, in 2009) towards the main consuming regions, already mentioned. The Occident tries to reduce the dependence on this region, among others because of the fact that the Middle East is characterized by a state of conflict, pursuing the diversification of supply sources, in this orientation being also included the great project "The Road of Caspian Energy to Europe"- in which Romania is engaged, as well -, fact that will determine new flows of transport. Apart from the Middle East, the export flows go from the Commonwealth of Independent States (Russia, plus Kazakhstan, Azerbaijan, Turkmenistan),-more than three hundred and forty mil. tones, West Africa (Nigeria and Angola, mainly), more than two hundred mil. tones, Central and South America (without Mexico), practically Venezuela, one hundred and thirty mil. tones, North Saharan Africa, one hundred and ten mil. tones, Mexico, almost one hundred mil. tones.

Figure no. 4: The main flows of oil trade in 2009 (mil. tones)

Source: British Petroleum, 2010

Conclusions

Foreign trade, longtime considered a barometer of the economy, both at the country and world level is nowadays-in fact, during the whole period after the Second World War-the most dynamic sector of the world economy. More than in any other economic domain, in the one of exports the knowledge-based economy effects reflect very well, the countries that have insisted on informational technology and modern communications, succeeding to be competitive on the world market and occupying the top places in the hierarchy of world

exporters: small countries-territories (Hong-Kong, Singapore, Netherlands, Belgium, Switzerland, Denmark, Israel, United Arab Emirates, Kuwait etc; one of them being medium in surface or population) detain places far superior to their position as surface and population on the global plan. At the same time, one must not forget the fact that humanity is in a transition phase from the industry-based economy which has been for a log time a factor of progress and competitiveness, to a knowledge-based economy. The best example is constituted by the oil trade, the most traded product on the world market.

References

1. Dobrotă, N. and Ciucur, D., 1995. *Economie politică.* Bucureşti: Editura Economică.
2. Jucan, C. N., 2003. *Intrarea în era economiei bazate pe cunoştinţe*. Sibiu: Editura Alma Mater.
3. Krugman, P., 1979. A Model of Innovation, Technology Transfer and World Distribution of Income. *Journal of Political Economy*, 87(2), pp. 253-266.
4. Manoilescu, M., 1986. *Forţele naţionale productive şi comerţul exterior. Teoria protecţionismului şi a schimbului internaţional*. Bucureşti: Editura Ştiinţifică şi Enciclopedică.
5. Neef, D., Siesfeld, A. and Cefola, J., 1998. *The Economic Impact of Knowledge*. Boston: Butterworth-Heinemann.
6. Nicolescu, O. and Nicolescu, L., 2005. *Economia, firma şi managementul bazate pe cunoştinţe*. Bucureşti: Editura Economică.
7. OCDE, 1996. *L'économie fondée sur le savoir.* Paris: OCDE.
8. Ougartchinska, R., 2008. *Războiul gazelor. Ameninţarea Rusiei*. Filipeştii de Târg: Editura Antet.
9. Puiu, A. and Marin, G., 1993. *Dicţionar de relaţii economice internaţionale.* Bucureşti: Editura Enciclopedică.
10. Rujan, O. and Pârgaru, I., 2004. *Economie internaţională*. Bucureşti: Editura Economică.
11. Servan-Schreiber, J. J., 1990. *Sfidarea mondială.* Bucureşti: Editura Humanitas.
12. Xenopol, A.D., 1967. *Opere economice.* Bucureşti: Editura Academiei R.S.R.
13. Neguţ, S., 2008. *Geopolitica. Universul puterii*. Bucureşti: Editura Meteor Press.
14. Neguţ, S. and Neacşu, M.C., 2009. Gas War. *Romanian Review on Political Geography,* 11(2), pp. 176-189.
15. Sébille-Lopez, P., 2006. *Géopolitique du pétrole*. Paris: Armand Colin.
16. E-comunitate, 2009. *Proiectul Economia Bazată pe Cunoaştere.* [online] Available at:<http://www.ecomunitate.ro/ProiectulEconomiaBazatapeCunoaştere(51).html> [Accessed 14 December 2010].
17. Romania Development Gateway, 2010. *Knowledge-Based Economy.* [online] Available at: <http://ro-gateway.ro/node/185929> [Accessed 14 December 2010].